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(54) Title: WAVEGUIDE STRUCTURE AND METHOD OF FORMING THE WAVEGUIDE STRUCTURE

(57) Abstract

A method for forming a high optical confinement waveguide structure comprising the steps of: forming a silicon–based waveguide on a substrate by depositing a waveguide layer of silicon containing material onto the substrate; wherein the material is selected in a manner such that the refractive index of the waveguide is greater than the refractive index of the substrate; wherein the forming of the silicon–based waveguide further comprises etching the deposited waveguide structure such as to form a ridge structure in the deposited waveguide layer; wherein the method further comprises the step of forming an optical signal processing element in and integrated with the deposited waveguide layer.